Coast Guard Polar Icebreaking
Agenda

- Missions & Strategies
- Current Icebreakers
  - Operations
  - Capabilities
  - Sustainment
- Icebreaker Acquisition
  - Stakeholders
- Summary
Coast Guard Icebreaking History, Missions & Strategies
1885 Cutter BEAR explores Alaskan waters for 40 years

1936-1941 USCG initiated intensive study of heavy icebreaker design

1946 Operation High Jump – Admiral Byrd’s Antarctic expedition

1950’s DEW stations built - required icebreakers for re-supply

1955-56 First Operation Deep Freeze - permanent U.S. presence on Antarctica

1956-66 USN transfers all icebreakers to USCG – 8 icebreakers

1965-56 Operation Deep Freeze - permanent U.S. presence on Antarctica

1960’s Alaskan north slope oil discovered – polar icebreakers receive national interest

1965-66 USN transfers all icebreakers to USCG – 8 icebreakers

1999/2000 USCGC HEALY: Planned in 80’s, funded 90’s, operational in 2000 to support Arctic Research

2006-2009 PSTAR in caretaker status

2010-2013 PSTAR reactivation

Future Trend
Multimission: Enforcement, Security, and Science

Discovery

Security

Enforcement
Polar Icebreaker Areas of Operation

Ensuring Global Access
Polar Icebreaker
Areas of Operations

Arctic

- Arctic Scientific Research
  - National Science Foundation
  - Bureau of Ocean Energy Management
  - NOAA
  - CG R&D Center
- Increased Human Activity
  - Northern Sea Route / Northwest Passage
  - Search and Rescue
  - Shoulder Season Risk

Antarctic

- Operation DEEP FREEZE- Re-supply McMurdo Station, Antarctica
- Coast Guard supported US Antarctic Program resupply since 1950s
- Primary infrastructure and supply point for U.S. Antarctic Program; requires annual sealift re-supply (cargo, fuel)

Ensuring Global Access
Missions Polar Icebreakers Complete in the High Latitudes

Defense Readiness

Ports, Waterways & Coastal Security

Living Marine Resources & Other Law Enforcement (i.e. EEZ Enforcement)

Marine Environmental Protection

Aids to Navigation

Search and Rescue

Marine Safety

Ice Operations

Ensuring Global Access
Operation Deep Freeze (ODF): McMurrydo Resupply

Cargo Amounts POLAR STAR ensured could reach McMurrydo Station Antarctica, ODF 2015:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
<th>% of Need</th>
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<tbody>
<tr>
<td>Dry Supplies (Vehicles, Food Stuffs, Building Materials)</td>
<td>7 Million Pounds</td>
<td>80%</td>
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<tr>
<td>Diesel Fuel</td>
<td>4.5 Million Gallons</td>
<td>100%</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>500,000 Gallons</td>
<td>100%</td>
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</tbody>
</table>
ODF Continued
M/V RENDA Escort
Scientific Research

- Ecosystem Studies
- Arctic Mapping
- Ice Research
- Oil in Ice Research
- Extended Continental Shelf Mapping
  - Multi-year Effort with Canadians
Strategies

- National Strategy for Arctic Region (NSAR) & Implementation Plan (NSAR IP)
  - DHS lead - “Ensure the United States maintains icebreaking and ice-strengthened ship capability with sufficient capacity“

- Coast Guard Arctic Strategy
- Cooperative Strategy for 21st Century Seapower (Joint USN/USMC/USCG strategy)
- Navy Arctic Roadmap
- NOAA Arctic Action Plan
Current & Future Icebreaking Capabilities
America’s Heavy Polar Icebreaker

Commissioned 1976
- Reactivated in 2013

Icebreaking Capacity
- 6 feet @ 3 Knots
- 21 feet Back & Ram

Flight Deck Equipped

Primary Mission
- Operation Deep Freeze: Breaking Channel for McMurdo Station Resupply
CGC HEALY (WAGB 20)

- America’s Medium Polar Icebreaker
- Commissioned 2000
- Icebreaking Capacity
  - 4.5 feet @ 3 Knots
  - 8 feet Back & Ram
- Flight Deck Equipped
- Primary Mission
  - Annual Scientific Deployments to Arctic
Polar Icebreaker Sustainment

- Depot Level Maintenance
  - Dry Docks & Dockside Availabilities
- Organizational Level Maintenance
- System Upgrades
  - Crew/Contract Preventative Maintenance
  - C4IT & Navigation Systems
  - Machinery Plant Control & Monitoring System
Polar Icebreaker Sustainment
Polar Icebreaker Acquisition

- Coast Guard Program of Record
  - Assigned Program Management Office/Staff
- Completing Requirements Development and Validation
  - Drafting Operational Requirements Document
- International Coordination
  - Governments of Canada and Finland
  - Conducting Worldwide Market Research
PIB Acquisition Stakeholders

- Department of State
- US Navy – OPNAV Staff
- US Arctic Research Commission
- Department of Homeland Security HQ
- National Science Foundation
- Transportation Command (TRANSCOM)
- Northern Command (NORTHCOM)
- Maritime Administration (MARAD)
- US Marine Corps
- National Oceanic & Atmospheric Administration
- Naval Sea Systems Command (NAVSEA)
Summary

• Missions & Strategies
• Current Icebreakers
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  – Capabilities
  – Sustainment
• Icebreaker Acquisition
  – Stakeholders
• Summary
Questions